

CLAIMS

1. A rotary connector comprising
a first part;
a second part rotationally coupled to said first part to form an interior of the rotary connector;
an electrical cable housed within said interior of the rotary connector; and
an over current protection device housed within an integral space of said rotary connector and configured to provide over current protection for said electrical cable.
2. The rotary connector of Claim 1, wherein said over current protection device consists of a single fuse configured to provide over current protection for said electrical cable.
3. The rotary connector of Claim 1, wherein said electrical cable comprises a high current capacity single conductor ribbon cable.
4. The rotary connector of Claim 1, wherein said integral space comprises a recess formed in said interior of the rotary connector.
5. The rotary connector of Claim 4, wherein said recess is separate from an annular space in said interior used to house the electrical cable.
6. The rotary connector of Claim 4, wherein said over current protection device snaps into said recess.
7. The rotary connector of Claim 1, further comprising a bus bar coupled to said electrical cable, said over current protection being integrated with said bus bar.
8. The rotary connector of Claim 7, wherein said over current protection consists of a single fuse configured to provide over current protection for said electrical cable.

9. The rotary connector of Claim 8, wherein said bus bar comprises:
- a first conductor electrically connected to said electrical cable; and
 - a second conductor electrically insulated from said first conductor and configured to be connected to a power input to said rotary connector, wherein said over current protection device electrically connects said first and second conductors.
10. The rotary connector of Claim 9, wherein said over current protection device comprises a blade fuse, said rotary connector further comprising a intermediate terminals connected to said first and second conductors and configured to electrically connect with said blade fuse.
11. The rotary connector of Claim 10, wherein said over current protection device comprises a pico fuse.
12. The rotary connector of Claim 9, wherein said over current protection device comprises a surface mount chip fuse.
13. The rotary connector of Claim 9, further comprising a heat sink feature configured to remove heat from the bus bar.
14. The rotary connector of Claim 13, wherein said heat sink feature comprises .8mm thick copper contacts used for said first and second conductors.
15. The rotary connector of Claim 13, wherein said heat sink feature comprises sink fins.
16. The rotary connector of Claim 13, wherein said heat sink feature comprises a heat pipe.
17. A steering wheel assembly comprising a rotary connector according to any one of Claims 1-16.
18. A rotary connector comprising
- a first part;

a second part rotationally coupled to said first part to form an interior of the rotary connector;

an electrical cable housed within said interior of the rotary connector; and means for protecting said electrical cable from over current, said means being housed within an integral space of said rotary connector.

19. A method of manufacturing a rotary connector, comprising:

providing a first part rotationally coupled to a second part to form an interior of the rotary connector;

providing an electrical cable housed within said interior of the rotary connector; and

providing an over current protection device housed within an integral space of said rotary connector and configured to provide over current protection for said electrical cable.

20. The method of Claim 19, further comprising snapping said over current protection device into a recess within the interior of said rotary connector.

21. The method of Claim 19, wherein said providing a heat sink feature for dissipating heat from said over current protection device.